

USSR

UDC 616.155.392-036.11-08

KHVATOVA, N. V., ~~LORIYE, Ye. I.~~, SOLOV'YEVA, Ye. A., and FREMKEL', M. A.,  
Hematological Department and Clinical Laboratory, Institute of Experimental  
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"Comparative Evaluation of Various Methods for Treatment of Acute Leukemia"

Moscow, Terapevticheskiy Arkhiv, Vol 43, No 5, 1971, pp 3-7

Abstract: Adult patients with acute leukemia were treated using VAMP therapy (treatment with vinristine, methotrexate, 6-mercaptopurine, and prednisolone) TsAMP therapy (VAMP therapy modified by replacing vinristine with cyclophosphane, or therapy with rubomycin S. VAMP therapy was the most effective method of treating primary acute lymphoblastic leukemia (100% complete remission), but was less effective (33% complete remission) in resistant forms of leukemia that had developed in patients already treated. It was ineffective in acute myeloblastic leukemia. The frequency of complete remissions after TsAMP therapy was 66% in primary acute lymphoblastic leukemia, 33% in resistant cases (relapses) of this disease, 14% in primary acute myeloblastic leukemia vs. 0% after VAMP therapy, and 0% in relapses in myeloblastic leukemia. Rubomycin S was the most effective drug in the treatment of primary acute myeloblastic leukemia, producing 33% of complete remissions,  
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KHVATOVA, N. V., et al., Terapevticheskiy Arkhiv, Vol 43, No 5, 1971, pp 3-7

but was no more effective in relapses of this disease than the combinations of drugs applied in VAMP and TsAMP therapy. Upon treatment of acute lymphoblastic leukemia with rubomycin, the frequency of complete remissions was 66 and 14% in primary cases and relapses, respectively. Rubomycin had a more severe effect in suppressing normal hemopoiesis, particularly in acute myeloblastic leukemia, than the combinations of drugs administered in VAMP or TsAMP therapy.

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AA0040715

UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

241009 HARD, FLEXIBLE POLY-BUTADIENE-1,3 RESINS  
 having good electrical and physical properties, are prepared by using a redox catalyst system based on an organic peroxide and either sp. VIII metal salt, metal- $\pi$ -complex or tertiary amine, and holding the temp at room temp. for 8-12 hrs. and then heating to 160-180°C over 2-4 hrs. Cross-linking without a redox catalyst gives hard but inflexible resins. In an example, 60 parts polybutadiene 40 parts styrene, 1 part dicumene peroxide, 2 parts 3% soln. of ferrocene in styrene and 2 parts benzoyl peroxide are mixed and left for 10 hrs. at room temp. after which the mixt. is heated to 160°C over 2 hrs. to give the final product. 29.3.65. as 1000457/23-5, VENDE, A. and LORKOVSKI, H.I. (East Germany) (15.8.69) Bul. 1371.4.69. Class 39c, Int. Cl. C 08f.

19750356

USSR

UDC 541.64:542.953

LORKOVSKIY, Kh. D., Central Institute of Organic and Macromolecular Chemistry,  
Berlin

"Ferrocene Polymers"

Moscow, Vysokomolekularnyye Soyedineniya, Vol 15, No 2, Feb 73, pp 314-326

Abstract: Various methods for synthesizing ferrocene containing polymers (except polymerization and polyrecombination) have been discussed. The mechanism of the formation and the properties of the polymers obtained are reported, concentrating on the mechanism based on the participation of  $\alpha$ -ferrocene carbonium ion. A suggestion is made for the most promising fields of application of ferrocene containing polymers, not so much as heat-resistant materials but as electron exchange resins and polymers with special magnetic and electrical properties. The application of ferrocene as a component in the systems accelerating "cold" curing of unsaturated polyester resins appears also to be promising.

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USSR

UEC: 681.327.12

FRIDMAN, G. Kh., TSVETOV, Ye. R., KARAKHOV, V. I., GALUSHECHKO, V. V.,  
IOS', V. F.

"An Optical-Electronic Device for Pattern Recognition"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 32, Nov 71, Author's Certificate No 318967, Division G, filed 13 Apr 70,  
published 28 Oct 71, p 151

Translation: This Author's Certificate introduces an optical-electronic device for pattern recognition which contains a coherent light source, collimator, transparency with recognition and reference patterns, Fourier transform lens, spatial light modulator, and photomultiplier, all located along an optical axis. The photomultiplier is connected to the signal input of a high-frequency filter. The device also contains an electronic oscilloscope. As a distinguishing feature of the patent, speed is increased and interference is decreased by using a synchronous light pickup, a control system, and a display device. The device is used for pattern recognition and for the detection of objects. The device is used for pattern recognition and for the detection of objects. The device is used for pattern recognition and for the detection of objects.

FRIDMAN, G. Kh., et al., Soviet Patent No 318967

electric motor. The photomultiplier is fastened on a fixed base inside the rotating cylinder. In the base of the cylinder is an opening for the synchro-pulse light pickup, which is connected to the input of the control voltage oscillator and to one of the inputs of the oscilloscope. The output of the controlling voltage oscillator is connected to the controlling input of the high-frequency filter. The output of this filter is connected to the input of the wide-band amplifier, and the signal envelope detector output is connected to the other input of the oscilloscope.

Acc. Nr.

AP0048044

Abstracting Service: S/70  
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR0185

A70-23193 # Dynamics of weakly coupled spin in ferromagnetic (Dinamika slabō zvl'azanogo domishkovogo spinu u feromagnetiku). M. O. Krivoglaз and V. E. Los. Akademiia Nauk Ukrain's'koi RSR, Institut Metalofiziki, Kiev, Ukrainian SSR. Ukrains'ku Fizichnii Zhurnal, vol. 15, Jan. 1970, p. 84-99, in Ukrainian.

Spectral representation of Green's functions and certain correlation functions for weakly coupled spin in a ferromagnetic crystal. The calculation is based on the closing of the chain of equations for Green's functions and is valid over the whole temperature range up to the Curie temperature. Both harmonic and 'anharmonic' interaction of the spin of the impurity atom's with the spins of the crystal atoms, as well as spin-phonon and spin-electron interactions, are taken into account. The different contributions to the damping and shift of the quasi-local spin excitation frequency are estimated.

(Author)

ALS

REEL/FRAME  
19791726

21

LOS; V. I.

# TECHNICAL TRANSLATION

FTC-ET-23- 373-72

ENGLISH TITLE: EQUATION OF STATE AND ASSOCIATION OF A REAL GAS

FOREIGN TITLE: URAVNIENIYE SOSTOYANIYA I ASSOTSIIATSIYA  
REAL'NOGO GAZA

AUTHOR: V. I. Los'

SOURCE: KHIMICHESKAYA TEKHNIKA I TEKHNOLOGIYA,  
No. 8, Kiev, 1969, pp. 63-67

Translated for FTC by Leo Kanner Associates

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USSR

UDC: 533.921:621.039.01

IVANOV, N. V., KOVAN, I. A., and LOS', Ye. V.

"Pre-Ionization of a Gas by the E-Wave Field in the TOKAMAK Chamber"

Leningrad, Zhurnal tekhnicheskoy fiziki, -No 3, 1973, pp 513-516

Abstract: This paper describes the experimental results of an investigation into the characteristic oscillation of a hollow toroidal resonator and the characteristics of high-frequency breakdown of the gas by the field of the E wave in the chamber of the Tokamak. The resonator was made of stainless steel with a small radius of 18 cm and a large radius of 60 cm. Low-inductance loops set close to the chamber wall were used to excite the resonator, and the oscillation source was a generator operating in the 600-700 MHz range developing power up to two kilowatts in the pulse mode. A feedback circuit was included to stabilize the frequency. The experiments in gas breakdown were conducted with hydrogen at a longitudinal magnetic field intensity of 200 oersteds. The experiments showed that high-frequency pre-ionization of a gas in the Tokamak chamber is possible, and that in the high-frequency breakdown of hydrogen a plasma cord appeared at the chamber axis.

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BAZHANOV, N. P., LOSEV, A. M., and MATVEYEVA, Ye. M.

"An Investigation Into the Depth and Quality of Document Indexing in the  
'PIR-2' Automated Information Retrieval System"

Moscow, Nauchno-Tekhnicheskaya Informatsiya - Seriya 2: Informatsionnyye  
Protsessy i Sistemy, September 1972, pp 19-22

Abstract: Statistical characteristics of document search patterns were investigated. A generalized statistical document search pattern was derived from an analysis of a statistical collection of document search patterns carried out by eight specialists on the subject.

The study was predicated on two assumptions: first, that indexing depth characterizes indexing quality and that statistical document search patterns describe document primary subject matter with sufficient accuracy and completeness; and second, that if in comparing a generalized document search pattern with a generalized statistical document search pattern the former is found to have the higher quantitative indices, then the quality of indexing done by information officers is not inferior to that done by the subject specialists.

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BAZHANOV, N. P., et al., Nauchno-Tekhnicheskaya Informatsiya - Seriya 2: Informatsionnyye Protsessy i Sistemy, September 1972, pp 19-22

The indexing quality  $W_i$  is measured by the mathematical expectation; and indexing inconsistency (nonsequential indexing), by the standard deviation  $\sigma_i$ . For the "PIR-2" computer-based system,  $W_i = 90\%$  and  $\sigma_i = 9\%$ .

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USSR

UDC 002.66.001

LOSEV, A. M.

"Evaluating the Efficiency of a Scientific-Technical Information System"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, No 7, 1971, pp 5-6

Abstract: The following may be adopted as general indices for evaluating the efficiency of a scientific-technical information system as a whole:  $E_0$  -- an index of the efficiency of the organization if it did not have an information system;  $E_1$  -- an index of the efficiency of the organization given the information system under consideration;  $E_i$  -- an index of the efficiency of the organization given an ideal information system. These indices may be combined to give a single index:

$$I = \frac{E_1 - E_0}{E_i - E_0}.$$

When the efficiency of the given information system equals the efficiency of an ideal system,  $I = 1$ . When the given system has no effect on the work of the organization using it,  $I = 0$ . Otherwise,  $0 < I < 1$ .

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LOSEV, A. M., Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, No 7, 1971, pp 5-6

The following index may be adopted and used to evaluate the efficiency of a scientific-technical information system in the solution of particular problems:

$$P(t_0) = P(t_{ud} < t_0) = \int_0^{t_0} F(t_{ud}) dt_{ud}$$

where  $P(t_0)$  is the probability of satisfying a request within a period of time not exceeding  $t_0$ , the time established in advance;  $t_{ud}$  is the time actually needed to satisfy the request; and  $F(t_{ud})$  is the probability density function of  $t_{ud}$ . Assuming that the information system can simultaneously service one type of request, then the distribution function of the time needed to satisfy requests of type  $i$  is given by

$$F(t_{ud}) = \sum_{i=1}^n P_i F_i(t_{ud}),$$

where  $n$  is the number of types of requests and  $P_i$  is the probability of a request of the  $i$ -th type occurring.  $P_i$  and  $F_i(t_{ud})$  may be determined experimentally by analyzing network planning and control schedules.

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Ion Exchange

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UDC 552.57:66.074.7:669.783

ADAMENKO, I. A., IOSEV, B. I., and YAVORSKIY, I. A., Institute of Combustible Minerals

"Separation of Germanium by the Ion Exchange Method"

Moscow, Khimiya Tverdogo Topliva, No 3, May-June 72, pp 65-71

Abstract: In this paper the behavior of germanium in very dilute aqueous solutions, obtained after treating Kuzbas coal, and its reaction with ion exchange resins of type EDE-10P, are examined. These are significant in the process of precipitation of this element on ion exchange resins. The mechanism of active extraction of germanium from the waters, the quantitative rules in the process of concentration, and the basic functions of ion-exchange equilibria in the germanium-ion-exchange system were determined. The results include the following: (1) basic anion exchange resins such as EDE-10P are useful for precipitating germanium from dilute solutions; (2) the ion exchange capacity increases more than 100 times in going from acidic (1 N HCl) to basic (pH 13) environments; (3) treatment of the exchanger did not noticeably influence its ion-exchange capacity; (4) the germanium was desorbed from the resin by acidic and basic solutions; (5) the absorbing capacity of the anion exchange resin increases with increasing concentration of germanium ions in solution; (6)

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ADAMENKO, I. A., et al., Khimiya Tverdogo Topliva, No 3, May-June 72, pp 65-71

germanium may be concentrated to 7 mg/ml by recirculating a 6 N HCl solution 6 times through a column containing the anion exchange resin saturated with germanium; (7) it is possible to adsorb germanium by a fluidized bed of the anion exchange resin; (8) suspended material (sols) did not reduce the exchange of the fluidized bed of anion exchange resin with respect to germanium if it were taken in a 1:1 ratio; (9) the separation of ion exchange resin from the sol particles was practically complete; and (10) losses of anion exchange resin up to about 5% are possible owing to its abrasion.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ADHESION OF THERMOPLASTS TO ELASTOMERS -U-  
AUTHOR--(04)--KOGAN, E.A., LOSEV, B.I., BALALAYEV, E.G., FRIEDMAN, M.L.  
COUNTRY OF INFO--USSR  
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 373-376  
DATE PUBLISHED--70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ADHESION, POLYPROPYLENE, THERMOPLASTIC MATERIAL, ELASTOMER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1602 STEP NO--UR/0069/70/032/003/0373/0376  
CIRC ACCESSION NO--AP0125224  
UNCLASSIFIED



2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125224

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF VARIOUS FACTORS ON THE STRENGTH OF THE ADHESION BOND BETWEEN POLYPROPYLENE AND RUBBERS HAS BEEN STUDIED. FOR ALL RUBBERS EXAMINED THE MAXIMUM ADHESION STRENGTH IS ATTAINED WITH THE CURING TIME APPROXIMATELY TWICE AS SMALL AS THAT REQUIRED FOR OPTIMUM PHYSICAL AND MECHANICAL PROPERTIES. INCREASE OF THE LAYER THICKNESS, POLARITY AND MOLECULAR WEIGHT OF RUBBERS DIMINISHES THEIR ADHESION TO NONPOLAR THERMOPLASTS. FACILITY: VNI I  
PROYEKTNYY INSTITUT TEPLOPROYEKT, MOSCOW. FACILITY: INSTITUT  
GORYUCHIKH ISKOPAYEMYKH AN SSSR, MOSCOW MOSKOVSKIY  
NEFTEPRERATYVAYUSHCHIY ZAVOD.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--MOISTURE PERMEABILITY OF PLIED UP POLYMER MATERIALS -U-  
AUTHOR-(03)-BALALAYEV, E.G., KOGAN, E.A., LOSEV, B.I.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (3), 43-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--PERMEABILITY MEASUREMENT, POLYPROPYLENE, BUTYL RUBBER,  
COMPOSITE MATERIAL, WATER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1801 STEP NO--UR/0191/70/000/003/0043/0044  
CIRC ACCESSION NO--AP0123598

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123598

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE H SUB2 O PERMEABILITY OF POLYPROPYLENE (I) PLIED UP WITH BUTYL RUBBER ELASTOMERS (II) WAS DETERMINED BY A "BEAKER" METHOD (P. TAYLOR, ET AL., 1936). THE DIFFUSION RATE OF H SUB2 O VAPORS THROUGH THE COMPOSITE MEMBRANE WAS INDEPENDENT OF THE ARRANGEMENT OF I OR II LAYERS. THE H SUB2 O PERMEABILITY OF THE COMPOSITE MATERIALS OBEYED THE DIFFUSION PRINCIPLES ESTABLISHED EARLIER FOR GASES PASSING THROUGH A 2 LAYER RUBBER, PROVIDED THERE WAS NO CHEMICAL REACTION BETWEEN THE POLYMER AND THE MEDIUM.

UNCLASSIFIED

USSR

UDC 621.792.6:678.7

KOGAN, E. A., LOSEV, B. I., BALALAYEV, E. G., and FRIDMAN, M. L.;  
All-Union Scientific Research and Design Institute Teploproyekt,  
Moscow; Institute of Mineral Fuels, Moscow, Academy of Sciences  
USSR; Moscow Petroleum Conversion Plant

"Adhesion of Thermoplasts to Elastomers"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 70, pp 373-376

Abstract: Elastomer-thermoplast sheets of the type used as coatings protecting against corrosion were prepared from butyl rubber, butadiene-styrene rubber (SKS-30), and butadiene-acrylonitrile rubber (SKN-40) that contained S and molten polypropylene joined to them under pressure. The two-layer sheets were subjected to vulcanization at 143° under pressure. The adhesion between the elastomer and polypropylene decreased in the order butyl rubber > SKS-30 > SKN-40. It was highest for butyl rubber because of the mutual compatibility of the two polymers, lower for SKS-30 because the rigid styrene groups interfered with mutual penetration, and lowest for SKN-40 because the cumbersome nitriloacrylic groups reduced interpenetration by diffusion. The adhesion was at a maximum after a

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KOGAN, E. A., et al, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 70,  
pp 373-376

definite length of the time of vulcanization (15-18 min); if vulcanization was continued for a time greater than the optimal, adhesion decreased because of shrinkage of the elastomer due to structuring. Use of polypropylene of different grades showed that adhesion increased with an increasing degree of atactic structure in the polypropylene, which was associated with a decrease in density. Addition to the polypropylene of carbon black in amounts  $\leq 5\%$  increased adhesion, while amounts of carbon black  $> 5\%$  reduced it. In the vulcanization pressure range of 1-7 kg/cm<sup>2</sup>, the maximum adhesion was obtained at a pressure of 5 kg/cm<sup>2</sup>. The authors thank S. S. VOYUTSKIY for his interest in the results of the work.

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NEW CRANE PRODUCED, DESCRIBED

UDC 621.873.25

Article by B. P. Losev, engineer (Moscow Severyanin Crane Building Plant) and Yu. V. Pavlov, engineer (All-Union Scientific Research Institute of Construction and Road Machinery): "The New KB-404 Crane for the Zero Cycle", Moscow, Stroitel'nyye i Dorozhnyye Mashiny, Russian, No. 11, 1971.

The Moscow Severyanin Crane-Building Plant produced and tested the KB-404 crane, and submitted it for series production for use in the zero cycle on the basis of a design prepared by the Special Design Bureau of the Moscow State Construction and Installation Trust and the All-Union Scientific Research Institute of Construction and Road Machinery.

The self-propelled, full-revolving, track-mounted KB-404 crane, with a multiple electric motor drive, is designed for mechanization of construction and installation operations in the zero cycle during the erection of civil and industrial buildings, as well as for loading and unloading operations.

The KB-404 crane is a modification of the basic model of the KB-160.2 crane, which is in series production at the Moscow Severyanin Crane-Building Plant on the basis of State Standard 13555-68. It utilizes the main metal structural elements (truck frame, swinging circle), operator's cab, and standardized units of the KB-160.2 tower crane.

\* The KB-404 cranes are also manufactured at the Karacharov Machinery Plant of the Main Administration for Housing and Civil Construction in the City of Moscow.

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JPRS 54873

6 JAN 72

The crane may be assembled in five different configurations, each of which is determined by the length of the boom and by the pulley block reserve ratio. Depending on the modification version and length of the boom the crane is capable of moving loads weighing from 5 to 30 tons vertically and horizontally.

Technical Characteristics of the KU-404 Crane

①	②			
	I	II	III	IV
③	10	15	20	25
④	10	15	20	25
⑤	10	15	20	25
⑥	10	15	20	25
⑦	10	15	20	25
⑧	10	15	20	25
⑨	10	15	20	25
⑩	10	15	20	25
⑪	10	15	20	25
⑫	10	15	20	25
⑬	10	15	20	25
⑭	10	15	20	25
⑮	10	15	20	25
⑯	10	15	20	25
⑰	10	15	20	25
⑱	10	15	20	25
⑲	10	15	20	25
⑳	10	15	20	25
㉑	10	15	20	25
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㉓	10	15	20	25
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㊾	10	15	20	25
㊿	10	15	20	25

Key:

1. Parameters
2. Modification
3. Boom length, meters
4. Maximum
5. Minimum
6. Hook hoisting height, meters
7. With maximum boom length
8. With minimum boom length
9. Depth to which hook may be lowered below top of track, meters
10. Load hoisting capacity, tons
11. With boom length of 37-25 meters
12. Same as above
- 10,107
- CSO 1873-8
13. Operating speed, meters/minute
14. Hoisting and lowering of load
15. Smooth depositing of load
16. Movement of crane
17. Rated power
18. Of electric motor, kilowatts
19. Maximum radius of swinging circle, meters
20. Gauge, meters
21. Base, meters
22. Dimensions, meters
23. Length
24. Width, (on tracks)
25. Height
26. Crane weight, tons

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1/2 013 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--EFFECT OF SOME PHYSICAL FACTORS ON THE INTERFACIAL POLYCONDENSATION  
OF 2,2-BIS(4-HYDROXYPHENYL) PROPANE AND PHOSGENE -U-  
AUTHOR--(03)--SMIRNOVA, O.V., KHORVAT, E., LOSEV, I.P.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 208-11

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INTERFACIAL POLYCONDENSATION, HYDROXYL RADICAL, BENZENE  
DERIVATIVE, PROPANE, PHOSGENE, POLYCARBONATE, PHENOL, MONOMER, MOLECULAR  
WEIGHT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0257

STEP NO--UR/0460/70/012/003/0209/0211

CIRC ACCESSION NO--AP0106913

UNCLASSIFIED



2/2 013

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PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF THE ORG. PHASE (HEPTANE, CCL SUB4, BENZENE OF CH SUB2 CL SUB2) AND MONOMER CONCN. ON MOL. WT. AND YIELD OF THE POLYCARBONATE (I) FROM INTERPHASE POLYCONDENSATION OF BISPHENOL A AND COCL SUB2 CATALYZED BY NAOH AND THE RATE OF COCL SUB2 HYDROLYSIS IN THESE SOLVENTS WERE STUDIED. AT 0.1 MOLE-L. CONCNS. OF EACH MONOMER, THE MOL. WT. OF I WAS 5-8 TIME MORE IN SOLVENTS THAT DID NOT DISSOLVE NOR SWELL I (HEPTANE, CCL SUB4 OR 7:3 VOL. MIXTS. OF HEPTANE AND CH SUB2 CL SUB2) THAN IN BENZENE OR CH SUB2 CL SUB2. HOWEVER, AT 0.7 MOLE-L. MONOMER CONCNS., I PREPD. WITH CCL SUB4 AND CH SUB2 CL SUB2 AS THE ORG. PHASE HAD MOL. WTS. 15,400 AND 15,000 COMPARED WITH 58,000 AND 7500 AT 0.1 MOLE-L. MONOMER CONCNS. CESSATION OF GROWTH OF I MOL. WT. AND YIELD OCCURRED IN HEPTANE, CCL SUB4, AND BENZENE AT SIMILAR TO 25, 5, AND 10 MIN, RESP., BU AT SIMILAR TO 5 MIN AND LARGER THAN 45 MIN IN CH SUB2 CL SUB2. HYDROLYSIS OF COCL SUB2 WAS 100PERCENT IN ALL 4 SOLVENTS WITHIN 90 SEC. APPARENTLY, THE POLYMER FILM FORMING AT THE INTERFACE IMPEDED MIGRATION OF COCL SUB2 TO THE REACTION ZONE AND THE CHARACTER OF THIS HINDRANCE DEPENDS LARGELY ON THE NATURE OF THE ORG. PHASE.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--EFFECT OF TERTIARY AMINES AND QUATERNARY AMMONIUM SALTS ON THE  
INTERFACIAL POLYCONDENSATION OF 2,2-BIS(4-HYDROXYPHENYL)PROPANE AND  
AUTHOR--(03)--SMIRNOVA, O.V., KHORVAT, E., LOSEV, I.P.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 424-9  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYMERIZATION RATE, HYDROXYL RADICAL, BENZENE DERIVATIVE,  
PROPANE, PHOSGENE, INTERFACIAL POLYCONDENSATION, SURFACE ACTIVE AGNET,  
POLYCARBONATE, TERTIARY AMINE, QUATERNARY AMMONIUM SALT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/0249 STEP NO--UR/0459/70/012/002/0424/0429  
CIRC ACCESSION NO--AP0106905  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYM. RATE OF (4-HOC SUB6 H SUB4) SUB2 CME SUB2 WITH COCL SUB2 IN ALK. SOLN. IS ACCELERATED BY ADDN. OF ET SUB3 N, PHNET SUB2, PHNICH SUB2 PH) SUB2, PHCH SUB2 NET SUB3 CL, OR TRIETHYLOCTADECYLAMMONIUM CHLORIDE. THESE COMPOS. ACT NOT ONLY AS SURFACE ACTIVE AGENTS PROMOTING POLYM AT THE INTERFACE BETWEEN ALK. AND ORG. PHASES, BUT ALSO FORM SOL. SALTS, SUCH AS R SUB4 N PRIME POSITIVE (4-OC SUB6 H SUB4 CME SUB2 C SUB6 H SUB4 Q SUB2 C) SUBN CL, WHICH REACT FURTHER WITH THE GROWING POLYCARBONATE IN THE AQ. PHASE AWAY FROM THE INTERFACE. ADDN. OF THESE COMPOS. INCREASES THE MOL. WT. OF THE POLYCARBONATES.

UNCLASSIFIED

USSR

UDC: 51:155.001.57:681.3.06

LOSEV, I. R., MOCHENOV, S. V.

"On Using Methods of Minimization of Boolean Functions in the Solution of Various Pattern Recognition Problems"

V sb. Avtomat. ustroystva ucheta i kontrolya (Automatic Devices for Computation and Checking--collection of works), vyp. 6, Izhevsk, 1970, pp 20-31 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV781)

Translation: Several algorithms are proposed for finding distinguishing characteristics in the solution of pattern recognition problems.

It is noted that the algorithms are applicable with practically any alphabet and ensure minimum code description of classes of alphabet with a minimum number of characteristics and simultaneous determination of the structure of the recognition system. The authors demonstrate the effective use of methods of minimizing Boolean functions in determining the necessary resolution of the retina, as well as optimum regions of disposition of S-elements. A characteristic feature of the described algorithms is that the recognition system in any case is constructed as a decoder using truth tables compiled in the learning stage. Bibliography of 17 titles. V. Mikheyev.

1/1

USSR

UDC51:155.001.57:681.3.06

ZLATKIS, V. M., KAZAKOV, V. S., KUCHUGANOV, V. N., LOSEV, I. R., MOCHENOV, S. V.

"Image Input-Output Device for Minsk-1 Computer"

Avtomat. Ustroystva Ucheta I Kontrolya, [Automatic Accounting and Control Devices--Collection of Works], No 6, Izhevsk, 1970, pp 164-174, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V682).

Translation: Problems are studied of creating and operating image input-output devices for small computers. The device is based on the FTA-PM phototelegraph apparatus with slight modifications and practically no modifications to the Minsk-1 computer. The input of an image is performed from a sheet 220 mm in width with unlimited length, and the output in onto electrochemical paper. The resolving capacity of the apparatus is 3-4 lines per mm, the operating speed is 120 lines per minute. Operation is performed at a carrier frequency of 1,900 Hz. Input and output of the image is performed by sectors 64 x 7 mm or 128 x 14 mm in size with resolution into 250 x 31 elements, with brightness quantized to [single-digit number eligible--Er] levels. A block diagram and functional diagram of the device are presented and the operation of the individual units is described. It is noted that this device has been used for successful operation of algorithms for recognition of printed characteristics, algorithms for classification of complex images according to their skeletal outline have been studied, a method of probabilistic coding of halftone images has been tested and experiments have been performed on the separation of con-

1/2

USSR

UDC51:155.001.57:681.3.06

ZLATKIS, V. M., KAZAKOV, V. S., KUCHUGANOV, V. N., LOSEV, I. R., MOCHENOV, S. V.,  
Avtomat. Ustroystva Ucheta I Kontrolya, No 6, Izhevsk, 1970, pp 164-174.

tours of images from photographic portraits of people.

USSR

UDC 51.621.391

LOSEV, I. R.

"Minimization of Weakly Defined Boolean Functions on the Basis of Separation of Sets"

Avtomat. Ustroystva Ucheta i Kontrolya [Automatic Accounting and Testing Devices -- Collection of Works], No. 6, Izhevsk, 1970, pp 3-10 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V479).

Translation: A method is suggested for construction of minimum forms of Boolean functions.

1/1

USSR

UDC 51.621.391

LOSEV, I. R.

"Possibility of Simplification of Synthesis of Complex Relay Devices"

Avtomat. Ustroystva Ucheta i Kontrolya [Automatic Accounting and Testing Devices  
-- Collection of Works], No. 6, Izhevsk, 1970, pp 11-19 (Translated from Refera-  
tivnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V467).

No Abstract.



USSR

UDC 51.621.391

LOSEV, I. R., TEPTIN, Yu. L.

"Certain Algorithms for Minization of Weakly Defined Boolean Functions"

Avtomat. Ustroystva Ucheta i Kontrolya [Automatic Accounting and Testing Devices  
-- Collection of Works], No. 6, Izhevsk, 1970, pp 32-49 (Translated from Refera-  
tivnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V478).

Translation: This note is associated with Abstract 4 V479. Algorithms of manual  
and machine minimization of weakly defined Boolean functions are studied.

1/1

USSR

UDC: 577.4

LOSEV, I. R., TEPTIN, Yu. L.

"Concerning an Algorithm for Minimizing Weakly Defined Boolean Functions"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Use of Computer Technology in Machine Building--collection of works), Izhevsk, 1971, pp 58-62 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V466)

[No abstract]

1/1

- 28 -

USSR

UDC: 577.4

LOSEV, I. R.

"Concerning the Semantic Definition of Conditions of Operation  
of Relay Devices"

V sb. Primeneniye vychisl. tekhn. v mashinostr. (Use of Com-  
puter Technology in Machine Building--collection of works),  
Izhevsk, 1971, pp 63-67 (from RZh-Kibernetika, No 8, Aug 72,  
Abstract No 8V426)

[No abstract]

1/1

1/2 023

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--MAGNETIC PROPERTIES OF UNALLOYED TRANSFORMER STEEL UNDER VARYING ANNEALING CONDITIONS -U-

AUTHOR--(05)--GREBENIK, N.P., DEVVOTKO, V.I., KAZADZHAN, L.B., MIKONOV, L.V., LOSEV, K.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR. SER. FIZ. 1970, 34(2), 348-50

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--TRANSFORMER STEEL, MAGNETIC PROPERTY, ANNEALING, ALLOY DESIGNATION, COLD ROLLING, MAGNETIC INDUCTION/(U)DBKP LOW CARBON STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0180

STEP NO--UR/0048/70/034/002/0348/0350

CIRC ACCESSION NO--AP0115884

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115884

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL GRADE 08KP (C 0.065, SI TRACES, MN 0.52, P 0.015, S 0.011, NI 0.07, CR 0.07, CU 0.09, AND AL 0.01 WT. PERCENT) MELTED IN AN ELEC. ARC FURNACE. BANDS, 3.0 MM THICK, WERE SUBJECTED TO BLACK ANNEALING AT 780DEGREES, WHEREUPON THE C CONTENT DECREASED TO 0.009-0.015PERCENT. AFTER PICKLING THE STEEL WAS COLD ROLLED TO 0.50 MM THICKNESS. SPECIMENS WERE CUT OUT LONGITUDINALLY AND TRANSVERSE TO THE ROLLING DIRECTION AND ANNEALED AT 10 PRIME NEGATIVE2 TORR AT VARIOUS CONDITIONS. MAGNETIC AGING WAS TESTED AT 120DEGREES FOR 120 HR. MAGNETIC INDUCTION SIGNIFICANTLY INCREASED WITH RISING TEMP., REACHING A MAX. AT 700-20DEGREES. THE SP. CORE LOSSES OCCURRED WITH INCREASING ANNEALING TEMP. TO 700-50DEGREES; HIGHER TEMPS. CAUSED ONLY SMALL DECREASES, INCREASING THE HOLDING TIME OVER 1.5-2 HR AT 750DEGREES HAD LITTLE EFFECT ON THE SP. CORE LOSSES. THE AGING AFFECTED THE SP. CORE LOSSES LITTLE. THE ANISOTROPY OF MAGNETIC INDUCTION DID NOT EXCEED 4PERCENT. TO PREVENT WELDING TOGETHER OF SHEETS THE ANNEALING TEMP. SHOULD BE LESS THAN OR EQUAL TO 800DEGREES AND HOLDING TIME LESS THAN OR EQUAL TO 2 HR. FACILITY: TSNIICHM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.396.677.495

TERESHIN, O. N., KUZNETSOV, L. N., ~~LOSEV, M. I.~~ Active Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications  
imeni A. S. Popov

"Wave Channel Type Antenna with Modulated Phase Velocity and Multiple Use of the Array"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, pp 31-35

Abstract: A study was made of the possibility of constructing antennas of the "wave channel" type with modulated phase velocity and multiple utilization of the antenna array. The procedure by which an array is used a multiple number of times to decrease the antenna length previously described by O. N. Tereshin, et al. [Radiotekhnika, Vol 25, No 12, 1970] for double use of the array is extended to the case of quadruple use of the array. Graphs are presented for the relief and impedance functions for two antenna arrays of length  $1.23\lambda$ . The figure shows that the relief line of both arrays of the antenna differ little from a straight line. Therefore, when constructing the mockup of the antenna the relief was neglected. This greatly simplified the design of the antenna. The schematic of the experimental mockup of the antenna constructed by the calculated data is presented excited by the procedure commonly used for director  
1/2

USSR

TERESHIN, O. N., et al., Radiotekhnika, Vol 27, No 1, 1972, pp 31-35

antennas. Experimental radiation patterns are presented. The analysis demonstrates the possibility of constructing wave channel antennas with modulated phase velocity and quadruple use of the array. The application of such antennas permits a significant decrease in the length of the antenna by comparison with ordinary antennas of the wave channel type.

2/2

USSR

UDC 576.809.33

LOSEV, M. N., Ufa Scientific Research Institute of Vaccines and Sera imeni  
I. I. Mechnikov

"Installation for Deep Cultivation of Aerobic Microorganisms"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 6, No 3, 1970, pp 343-351

Abstract: New fermentation equipment in which all auxiliary equipment is kept behind face panels has been designed. The equipment consists of independent sections, each holding a fermentation vessel. The number of such sections is determined by the required production capacity. A resistance thermometer is provided for temperature control. Sterilized air is supplied through a compressor, and is purified by a filter. The fermentation vessel has a capacity of 60 liters, and is made of high-grade aluminum. In the upper part of the vessel there are openings for attaching the mixing and aeration lines. The stirrer has six blades and operates at a stirring rate of 1,000-2,000 rpm. Protection against contamination by external microflora is guaranteed by a specially designed labyrinth channel with a system of gaskets along the outside shaft of the stirrer. A special procedure has been developed for preparation of the system for sterilization prior to its use. Many microorganisms can be grown in this device.



USSR

UDC 615.217.34.015.4

LOSEV, N. A., Laboratory of Experimental Pharmacotherapy, Institute of  
Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Neurophysiological Analysis of the Central Action of a New N-Cholinolytic,  
IEM-506"

Moscow, Farmakologiya i Toksikologiya, No 5, 1972, pp 544-549

Abstract: In acute experiments on rabbits, the preparation IEM-506 (1-ethyl-2-diethylaminoethyl ester of diphenylacetic acid) was found to be capable of penetrating the blood-brain and blood-tissue barriers and exerting a blocking effect on the reticular formation, dorsal hippocampus, amygdala, caudate nucleus, and cerebral cortex regardless of the mode of injection. IEM-506 is a central n-cholinolytic because it can decrease the excitability of the above brain structures and also antagonize the action of the n-cholinomimetic nicotine on these structures when injected simultaneously with it.

1/1

1/2 020  
UNCLASSIFIED  
PROCESSING DATE--30OCT70  
TITLE--X RAY BACKGROUND IN THE LONGWAVE SPECTRAL REGION -U-  
AUTHOR--(04)--REVENKO, A.G., PAVLINSKIY, G.V., LOSEV, N.F., AFONIN, V.P.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(2), 166-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--FLUORESCENCE, X RAY, SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAHE--1989/0919  
STEP NO--UR/0032/70/036/002/0166/0169  
CIRC ACCESSION NO--AP0107448  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107448

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFLUENCE OF SEVERAL EFFECTS ON THE BACKGROUND INTENSITY FOR X RAY FLUORESCENCE IN THE LONGWAVE SPECTRAL REGION 2-10 ANGSTROM ( SUBALPHA LINES OF TI, FE, SI, AND MG) IS DISCUSSED. NONE OF THE DISCUSSED PHENOMENA IS THE DOMINATING ONE FOR EXPLANATION OF THE BACKGROUND; THUS OTHER EFFECTS NEED TO BE CONSIDERED.

FACILITY: INST. GEOKHIM., IRKUTSK, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--CALCULATION OF THE INTENSITY OF BREMSSTRAHLUNG FOR X RAY TUBES -U-  
AUTHOR--(05)-AFONIN, V.P., LOSEV, N.F., PAVLINSKIY, G.V., GUNICHEVA, T.N.,  
REVENKO, A.G.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(4), 431-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--BREMSSTRAHLUNG, X RAY, SPECTRUM, RADIATION INTENSITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/2032 STEP NO--UR/0032/70/036/004/0431/0434  
CIRC ACCESSION NO--AP0133886  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138886

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMULA BY CRAMERS IS COR. FOR THE CALCN. OF THE SPECTRUM OF BREMSSTRAHLUNG. THE DERIVED FORMULA IS THE CORRECTION FOR DISPERSION AND ABSORPTION OF ELECTRONS OF BREMSSTRAHLUNG IN AN ANODE. THE CALCN. OF CORRECTION COEFF. IS BASED ON THE IDEA OF TWO STREAMS OF ELECTRONS IN THE ANODE, ONE IS DIRECT MOVEMENT AND THE SECOND REVERSED. BY USING THE COR. FORMULA THE INTENSITY WAS CALCD. OF BREMSSTRAHLUNG FOR AL, CU, ND, AG, AND W ANODES. THE RESULTS ARE COMPARED WITH EXPTL. DATA. GOOD AGREEMENT WAS FOUND IN THE LONGWAVE SPECTRAL REGION. FACILITY: INST. GEOKHIM., IRKUTSK, USSR.

UNCLASSIFIED

USSR

Materials UDC 621.039.5

VOTINOV, S. N., LOSEV, N. P., PROKHOROV, V. I., SAMSONOV, B. V., TSYKANOV, V. A.,  
FIN'KO, A. G., Melekess

"Estimate of Long Term Strength of Structural Materials in Reactor"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 61-64.

Abstract: Results are presented, produced in testing of tubular specimens of a number of structural materials under conditions of bombardment in a nuclear reactor. Two hundred hour tests performed with a flux of  $2.5 \cdot 10^{12} \text{ cm}^{-2} \cdot \text{sec}^{-1}$  fast neutrons and  $6 \cdot 10^{13} \text{ cm}^{-2} \cdot \text{sec}^{-1}$  thermal neutrons showed that the time to rupture for tubing of steels Types OKh16N15M3B, OKh16N15M3BR and Kh18N10T at  $650^\circ\text{C}$  decreases in comparison to the time to rupture without bombardment by not over 3-10 times. The deformation at rupture is approximately 1.5 times less than for specimens not bombarded. No changes in durability or ductility of copper and copper with chromium were observed in the reactor at  $700^\circ\text{C}$ .

CHANGE IN HUMAN HEAT EXCHANGE INDICES UNDER THE INFLUENCE OF  
HYPOCHLORIC SODIUM

Article by S. S. Losev and I. I. Novikova; Moscow, Akademiya  
Nauk SSSR, Biologiya i Meditsina (Current Pro-  
gress in Space Biology and Medicine), Moscow, 1971. pp 311-  
312.

Heat exchange indices were studied in nine healthy  
male volunteers over a seven-month period. After collecting  
control data (5.5 months) the volunteers were subjected to  
30 days isolation, during which twice each five days extro-  
mal conditions were created: first factor -- increase in am-  
bient temperature to 34°C and increase in absolute humidity  
to 33 mm; second factor -- temperature increase to 33°C and  
absolute humidity to 22 mm and carbon dioxide to 2%.

The following were registered by remote control: body  
temperature, skin temperature at five points, temperature of  
the exhaled air and mucosa, heat flux, perspiration, heat and  
pain thresholds of heat sensations. Upon termination of the  
experiment data on interposition cards were employed in an  
analysis of the subjective sensations of these subjects.

Analysis of objective (measurements) and subjective  
data revealed that the subjects experienced the greatest  
stressing of the heat-regulating mechanism during the period  
of exposure to the first factor. All the studied heat ex-  
change indices increased with a reliability greater than 90-  
99%, other than the heat flux, which decreased sharply ( $P <$   
0.001) and the temperature difference between the pain and  
heat thresholds, which also decreased reliably ( $P <$  0.001).

During the period of exposure to the second factor  
this stress of the heat-regulating apparatus was not observ-  
ed, possibly due to a weakening of the effect of the "high  
temperature - high humidity" combination, possibly not without

Losev, S. S.

SPRS 56,499  
14 JULY 72

139

USSR

UDC 621.365.82

LOSEV, S. A.

"Electron-Transition Gas Dynamic Lasers"

Nauch. tr In-t mekh. Mosk. Un-ta (Scientific Proceedings of the Institute of Mechanics, Moscow University), No 21, 1973, pp 123 - 127, RZh-Fizika, No 9, Sep 73, Abstract No 9D761

Translation: The possibility of developing gas dynamic lasers oscillating in the visible region of the spectrum on the basis of electron transitions of molecules is discussed. The conditions for obtaining a population inversion in the electronic states of stable molecules with rapid cooling of a heated gas are evaluated (numerical examples for  $\text{Cl}_2$ ), as well as the results of photo-stimulated recombination. It is noted <sup>2</sup> that in the latter case very high specific powers can be achieved, since the density of the gas is limited only by recombination in triple collisions and can be fairly high (approximately  $10^{19}$  centimeter<sup>-3</sup>). There is also a report on the production of population inversions at the levels of hydrogen, argon, and helium atoms with non-equilibrium electron-ion recombination in a plasma cooled during supersonic flow. Nine bibliographic citations.

V. B. Khalfin

1/1



1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--ORGANOSILICON AMINES USED AS CORROSION INHIBITORS -U-  
AUTHOR--(05)-SHREYBER, G.K., SAAKIYAN, L.S., LOSEV, V.B., ALKHAMEDAN, KH.,  
SKRIPCHENKO, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1) 200-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CORROSION INHIBITOR, ORGANOSILICON COMPOUND, AMINE DERIVATIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1983/0300 STEP NO--UR/0080/70/043/001/0200/0201  
CIRC ACCESSION NO--AP0053285  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION INHIBITING ACTIVITIES OF THE TITLE COMPS., RS[(OET) SUB3 (I), WHERE R EQUALS H SUB2 N(CH SUB2) SUB3 PRIME NEGATIVE, ET SUB2 N(CH SUB2) SUB3 PRIME NEGATIVE, ET SUB2 NCH SUB2 PRIME NEGATIVE, PHNHCH SUB2 PRIME NEGATIVE, H SUB2 N(CH SUB2) SUB6 NHCH SUB2 PRIME NEGATIVE, H SUB2 NIC SUB2 H SUB4 NH) SUB2 (CH SUB2) SUB3 PRIME NEGATIVE, AND H SUB2 NIC SUB2 H SUB4 NH) SUB2 CH SUB2 PRIME NEGATIVE, WERE DETD. (THE RESULTS ARE GIVEN IN TABULAR FORM AS PERCENT PROTECTIVE ACTION) AT VARIOUS TEMPS. AND CONCNS. OF I. I CONTG. POLYAMINE GROUPS WERE MOST EFFECTIVE.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--PROCESSES FOR INITIATING COLUMN CHARGES OF THE SIMPLEST EXPLOSIVES  
-U-  
AUTHOR-(06)-DYADECHKIN, N.I., LOSEV, V.G., ZHELTETSKIY, A.YE., BAYDA,  
V.I., NAZARCHUK, M.N., SEMKO, G.I.  
COUNTRY OF INFO--USSR  
SOURCE--GORN. ZH. 1970, 145(3), 36  
DATE PUBLISHED-----70  
SUBJECT AREAS--ORDNANCE  
TOPIC TAGS--AMMONIUM NITRATE, DIESEL FUEL, DETONATION, COMMERCIAL  
EXPLOSIVE/(U)AS8 GRANULIT EXPLOSIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0763 STEP NO--UR/0127/70/145/003/0036/0036  
CIRC ACCESSION NO--AP0136200  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136200

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLUMN CHARGES OF IGDANIT (A MIXT. OF 7 L. DIESEL FUEL WITH 100 KG GRANULATED NH SUB4 NO SUB3), GRANULIT AS-8, AND ZERNOGRANULIT (THE COMPN. OF THE LAST TWO EXPLOSIVES IS NOT GIVEN) WERE INITIATED. TO AVOID DUST FORMATION WHEN FILLING THE BLAST HOLES WITH ZERNOGRANULIT, 4PERCENT WATER OR DIESEL FUEL WAS ADDED TO THIS EXPLOSIVE. THE EXPTS. WERE DONE IN MINES UNDERGROUND, IN STEEL PIPES 4-4.5 M TIMES 100 MM DIAM., WITH 2.5-MM WALLS. THE EXPLOSIVES DETONATED WHEN INITIATED BY 2 LINES OF DETONATING CORD PLACED ALONG THE WHOLE LENGTH OF THE CARTRIDGES, OR BY TWO DONOR CHARGES (MIN. WEIGHT OF 0.4 KG EACH), CONNECTED BY TWO LINES OF DETONATING CORD.  
FACILITY: KRIVOROZH. GORNORUD. INST., KRIVOI ROG, USSR.

UNCLASSIFIED

USSR

UDC 621.385.623

KORNILOV, S.A., LOMAKIN, G.V., LOSEY, V.L., NOVOSELETS, V.I.

"Investigation Of Fluctuations In Mixer Klystrons"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 40-50 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A150)

Translation: Theoretical and experimental investigations of fluctuations in mixer klystrons caused by the noise of an electron beam show that with a small modulation index of the beam ( $m \approx 0.1$ ) it is possible by a reasonable tuning of the resonant cavities (the first two resonant cavities are tuned to the frequency of the input signal and the remainder to the frequency of the biased signal) to reduce the level of the phase fluctuations in equal parts of the spectrum by approximately 10 db.

Summary.

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USSR

UDC 621.396.677.3

BEY, N. A., ZIMIN, D. B., KREKHTUNOV, V. M., LOSEV, V. S., SEDENKOV,  
Ye. G.

"An Element for a Reflecting Antenna Array"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 23, Aug 71, Author's Certificate No 310326, Division H, filed 8 Dec  
69, published 26 Jul 71, p 170

Translation: This Author's Certificate introduces an element for a  
reflecting antenna array which operates with arbitrarily polarized  
signals. The element consists of a phase shifter, radiators with  
superimposed phase centers, and sections of transmission line. As a  
distinguishing feature of the patent, the design is simplified by using  
in the element a feed-through phase shifter and two radiators with  
orthogonal polarization characteristics connected to the two outputs  
of the phase shifter by sections of transmission line which pass signals  
with fixed polarization.

1/1

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LOSEV, Y. S.

ANTENNAS

LOSEV, Y. S.

UNCLASSIFIED

JPRS 54764  
22 December 1971

# NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. B. Zuhrah, corresponding member of the USSR Academy of Sciences and V. I. Emyelchenko, candidate of engineering sciences: Radiofizika i fizicheskaya teoriya mikrovolnovykh ustroystv, Radio i Svyaz, Moscow, 1970, No 2-5, 1970, signed to press 14 October 1970, Machine Building Press, Moscow.

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Concerning the Distortions of Spiral Antenna Radiation Characteristics .....	53
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- a - [1 - USSR - F]

UDC 629.7.051:621.396.6.001

# A STUDY OF ANTENNAS WITH FREQUENCY BEAM SCANNING

Candidate of Engineering Sciences D. B. Zimin  
and Engineer V. S. Loser

PAGES 217-254

## Limiting Characteristics of a Linear Antenna

One of the methods of constructing plane antenna arrays with wide-angle electrical beam scanning is the use of the frequency method of beam scanning on one plane and phase scanning (by means of electrically controlled phase inverters) on the other. In this case, the antenna array is assembled from individual linear antennas with frequency beam scanning ("bars"), each of which is excited through an individual phase inverter (reference [1]).

For beam scanning in a cone with an angle at the peak of  $40^\circ$  to  $90^\circ$ , a short spacing of the radiators is necessary and, consequently, a short transverse dimension of the "bar",  $0.7\lambda$  to  $0.58\lambda$ , which is one of the serious requirements imposed upon the "bar".

Besides this, obvious requirements of high electrical characteristics (great transmission power, low losses, low irregularity of angular frequency characteristics) are imposed upon the "bar", and for each of these characteristics we may indicate a potential maximum magnitude.

The maximum transmission power of the linear antenna with frequency beam scanning is, naturally, considered to be the power transmitted by a smooth rectangular waveguide of the corresponding wave range.

It will be demonstrated below that we may propose such "bars" whose delay systems have a transmission power that practically coincides with the limiting value.

The installation of the radiators leads to a certain weakening of the electrical strength of the delay system, but not to a greater degree than in conventional antennas of the waveguide-slot type. In other words, the decrease in the transmission power may not even be a specific factor of an antenna with frequency beam scanning.

The minimum losses (or maximum efficiency) are possessed by a "bar" constructed according to a parallel circuit, in which excitation of each radiator is accomplished from a single antenna input by means of waveguide segments with a progressively increasing length (reference [2]).



USSR

UDC 621.396.677

ZIMIN, D. B., LOSEV, V. S.

"Study of Antennas with Frequency Rocking of the Beam"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 197, vyp. 215, pp 217-254 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B30)

Translation: The limiting characteristics of linear antennas with frequency rocking of the directional diagram are defined. There are 19 illustrations, 2 tables and a 10-entry bibliography.

1/1

USSR

UDC: 621.317.757.38

LOSEV, V. V.

"Infra-Low Frequency Spectrum Analyzer"

Moscow, Priory i Tekhnika Eksperimenta, No. 3, 1971, pp 121-123

Abstract: This article describes an infra-low frequency spectrum analyzer using active transistorized filters with a constant Q throughout the frequency range. Simple in design and capable of being manufactured and adjusted with easily available materials, the analyzer is designed to investigate electrical fluctuations in a broad spectrum. Examples of such fluctuations are the f-l or generation-recombination spectra in semiconductors. The basic principle of the equipment is direct filtration and subsequent analysis. The equipment itself consists of a broad-band preamplifier and a separate block made up of the main amplifier and the filters. Curves are given of the noise energy spectrum of the apparatus and its frequency characteristic. A schematic of the main amplifier and the filters, using MP11A and P20 transistors, is also given. Plotted on the same axes as the noise energy curves is the noise density spectrum of a 50-ohm NLT-2 resistor, as obtained by this instrument.

1/1

Acc. Nr.

AP0050439

Abstracting Service:

CHEMICAL ABST. 710

Ref. Code

4P0051

105768w Modulation of the Q-factor of a molecular gas laser by using saturating filters. Logov, V. V.; Papulovskii, V. F.; Fedina, T. A. (USSR). *Sov. Spectrosc.* 1970, 28(2), 420-1 (Russ). For modulation of laser irradiation, a cell filled with  $C_2H_2$  was used as a satg. filter;  $C_2H_2$  had an absorption band in the region of irradiation frequency of laser 840-80 cm. Generation of sequence of normal irradiation impulses was obtained. Their duration and repetition were changed in dependence on parameters of the active medium and  $C_2H_2$  pressure. The optimal operation conditions were 3.5 torr of  $C_2H_2$  and 25-30 mA. Under these conditions, the duration of the impulses  $\leq 10$   $\mu$ sec. The rearrangement of the equipment enabled obtaining the impulse irradiation of the lines P-12 to P-26. The max. output was with the P-20 line. The pressure of admixt. (He, N,  $CO_2$ ,  $SF_6$ ) influenced significantly parameters of the generation of the impulses. The obsd. oscillogram was quite complicated, which was caused by both complexity of active medium and flexibility of gas filter. M. Tichy

REEL/FRAME  
19810418

2/14

1/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF HYDROGEN ON THE WELDABILITY OF PIPES FROM STEELS ALLOYED  
WITH TRACE ADDITIVES -U-

AUTHOR--(03)-TARLINSKIY, V.D., KAPINOS, D.B., LOSEV, YU.F.

COUNTRY OF INFO--USSR

SOURCE--STROIT. TRUBOPUOVODOV 1970, 15(1), 19-20

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--WELDABILITY, STEEL PIPE, MICROALLOYING, HYDROGEN  
EMBRITTLMENT, METAL CRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/1840

STEP NO--UR/0045/70/015/001/0019/0020

CIRC ACCESSION NO--AP0118804

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118804

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VARIOUS FORMULAS IN THE LITERATURE BASED ON THE C EQUIV. FOR THE ASSESSMENT OF WELDABILITY ARE CONSIDERED ONLY AS INDICATIVE, NOT ACCOUNTING FOR THE EXTREME EFFECTS OF TRACE ELEMENTS. THE USE OF SPECIFIED HEATING TEMP. PRIOR TO WELDING TO PREEMPT MICROCRACKING ALSO WAS UNCORRELATED. IN THE NEW WORK, THE PARTICULAR EFFECT OF H CONTENTS WAS SHOWN IN THE MODIFICATION OF THE REQUIRED PREHEATING TEMPS. AND THUS THE AVOIDANCE OF TOO RAPID CHILLING WITH A BETTER CRYSTD. JUNCTION; WITH INCREASE OF H, HIGHER TEMPS. WERE USED TO REDUCE H EMBRITTLEMENT. COMPREHENSIVE FORMULAS TO ACCOUNT FOR ALL FACTORS WERE FOR C EQUIV.  $E \text{ SUBC} = C \text{ PLUS } (SI-30) \text{ PLUS } (MN-20) \text{ PLUS } (CU \text{ PLUS } NI \text{ PLUS } CR \text{ PLUS } MO)-50 \text{ PLUS } (V \text{ PLUS } NB \text{ PLUS } TI)-5 \text{ PLUS } 5B \text{ PLUS } (T-400) \text{ PLUS } (H-100)$ , WHERE THE SYMBOL REPRESENTS PERCENT OF ELEMENT OR FOR H, CM PRIME3-100 G, AND T EQUALS WALL THICKNESS OF TUBES; THE CONDITIONAL PREHEATING TEMP.  $T \text{ SUBC} = 1100E \text{ SUBC} \text{ MINUS } 400 \text{ DEGREES}$ . ACTUAL PREHEATING WAS PRESCRIBED FOR VALUES T SUBC GREATER THAN 100 DEGREES. INCREASED H LEVEL WAS PREVENTED BY PREDESSICATION OF THE FLUX SHEATHED ELECTRODES, BUT OTHERWISE MIGHT RISE TO SIMILAR TO 10 CM PRIME3-100 G OWING TO THE TYPE OF SEAM, THE USE OF AUTOMATIC OR MANUAL METHODS, OR BY SERIAL WELDING. PLOTS FOR T SUBC AGAINST H CONTENT FOR VARIOUS ADDNS. TO THE STEEL SHOWED A GENERALLY LINEAR BEHAVIOR IN ACCORDANCE WITH THE WEIGHTED FORMULA RELATIONS. THE NECESSITY FOR PREHEATING WAS SHOWN TO BE MOST FAVORABLE TO THE WELD STRENGTH WITH GAS SHROUDING.

UNCLASSIFIED

USSR

UDC 539.4:621.791

BULATOV, Yu. V., YEROKHIN, A. A., and LOSEVA, G. I., Moscow

"Fractographic Analysis of Hot Cracks in Nickel Alloy Weld Seams"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 72, pp 95-100

Abstract: For investigation of hot crack formation in nickel alloy weld seams by fractographic analysis the following materials were used: EI435 nickel alloy ( $\leq 0.12\%$  C, 19-23% Cr,  $\leq 0.7\%$  Mn,  $\leq 0.8\%$  Si 0.4% Ti (max) and  $\leq 0.2\%$  Al; an experimental Ni-Nb-Al alloy ( $\leq 0.04\%$  C, 10-11% Nb, 5-6% Al, 0.15% Ti (max), 0.13% Fe). Comparison of data on the resistance of EI435 alloy to hot crack formation and fractographic analysis of the crack surface indicated that crack nucleation occurs in the solid-liquid state which is contradictory to the widely expressed opinion about the sub-solidus nature of hot cracks in Ni-Cr alloys. Fractographic analysis of the experimental nickel alloy showed that cracks form in the solid state. Electron fractograms of the cracks showed that fracture occurs as intergranular failure of second phase particles without significant traces of plastic deformation. The experimental alloy is a precipitation hardening  
1/2

1/3 010 UNCLASSIFIED PROCESSING DATE--02JCT70  
TITLE--INVESTIGATION OF MICROORGANISM PEPTID HYDROLASES -U-  
AUTHOR--(04)-TSIPEROVICH, O.S., LOSEVA, A.L., KOLGOZEYSKA, M.V., LISEVALV,  
M.V.  
COUNTRY OF INFO--USSR  
SOURCE--UKRAYNS'KIY BIOKHMICHNIY ZHURNAL, 1970, VOL 42, NR 2, PP 227-233  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--MICROORGANISM, PEPTIDE HYDROLASE, FUNGUS, STREPTOMYCES,  
PROTEIN, PEPsin, TRYPSIN  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REL/FRAME--1988/1531 STEP NO--UR/0300/70/042/002/0227/0233  
CIRC ACCESSION NO--AP0106284  
UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106284

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ARTICLE DEALS WITH BRIEF REVIEW OF WORKS IN WHICH THE AUTHORS STUDIED THE COMPLEXES OF PEPTID HYDROLASES, PRODUCED BY STREPTOMYCES GRISEUS, ASPERGILLUS FLAVUS, A. SPERGILLUS ORYZAE. THE METHODS ARE DEVELOPED OF DISTINGUISHING THESE COMPLEXES AS WELL AS OF STR. GRISEUS IN THE CRYSTALLINE FORM. ALL THREE ARE CAPABLE OF SPLITTING IN THE PROTEIN MOLECULE UP TO 80PERCENT OF PEPTIDE LINKS LIKE "PRONASE". THE PHYSICOCHEMICAL PROPERTIES ARE INVESTIGATED OF THE OBTAINED ENZYMIC PROTEINS: PH OPTIMUM OF ACTIVITY, STABILITY, EFFECT OF METAL IONS, EDTA, SOME DENATURANT FACTORS. STUDYING THE EFFECT ON SYNTHETICAL SUBSTRATE, THEIR ENZYMIC COMPOSITION WAS INVESTIGATED; THE PROTEINASE ACTIVITIES ARE FOUND OF THE TRYPSIN TYPE AS WELL AS OF PEPSIN (IN THE CRYSTALLINE PROTEASE OF STR. GRISEUS); A SERIES OF PEPTIDASE ACTIVITIES, LEUCINAMINOPEPTIDASE, CARBOXYPEPTIDASE, AMINOTRIPEPTIDASE, VARIOUS DIPEPTIDASES, GLYCILE GLYCINIC, GLYOILE 1 LEUCINIC AND OTHERS IS FOUND. THE COMPLEXES WERE SEPARATED BY THE METHODS OF IONIC EXCHANGE CHROMATOGRAPHY, GEL FILTRATION, DISC ELECTROPHORESIS, SOMETIMES BY SEDIMENTATION; THEIR CONSIDERABLE HETEROGENEITY IS OBSERVED (FROM FIVE UP TO EIGHT COMPONENTS). THE SEPARATION OF SOME PROTEINASES AND PEPTIDASES IS CARRIED OUT ON DEAE CELLULOSE. PROTEINASE ASP. FLAVUS IS DISTINGUISHED AND STUDIED, IT IS SHOWN THAT THE PRESENCE OF METAL AND THIOL GROUP IONS IS OF NO IMPORTANCE FOR MANIFESTATION OF ITS ACTIVITY.

UNCLASSIFIED



3/3 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106284

ABSTRACT/EXTRACT--IN THE COMPLEX FROM ASP. ORYSAE PROTEINASE IS FOUND OF THE TRYPSIN TYPE WITH UNUSUAL PROPERTIES, HYDROLYZING BENZOYL ARGININE METHYL ESTER AND BENZOYL ARGININE ETHYL ESTER, BUT NOT SPLITTING TOSYL ARGININE METHYL ESTER AND HAVING NO AMIDASE ACTIVITY BY BENZOYL ARGININE PARANITROANILIDE. EXCEPTIONALLY HIGH CONCENTRATION IS FOUND OF AMINOPEPTIDASE HYDROLYZING 1 LEUCILE GLYCILE GLYCINE.

UNCLASSIFIED

USSR

UDC 621.791.052.01:548.5:669.245

SHORSHOROV, M. KH., Doctor of Technical Sciences, CHERNYSHOVA, T. A., Candidate of Technical Sciences, and ~~LA~~SEVA, G. I., Engineer, Institute of Metallurgy imeni A. A. Baykov

"Grain Boundary Migration and Intergranular Slip in the Weld-Seam Metal of Nickel Alloy Joints"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 73, pp 6-8

Abstract: The effect of the type and concentration of alloying elements on the processes of boundary migration and intergranular slip was investigated in alloys of nickel with aluminum (up to 11 at. %) and niobium (up to 6.55 at. %). Alloying of nickel with Al and especially Nb lowers the slip magnitude. This is related to strengthening of the solid solution, i. e., to the increased shear strength in the grain volume and retardation of dislocation movement. Measurements of microhardness and lattice parameters showed that niobium strengthens the matrix more strongly than aluminum owing to large lattice distortions. Moreover, in the grains of the Ni-Nb solid solution, transverse slip is retarded in connection with the significant lowering of stacking fault energy. The effect of the type of alloying element on slip was also associated with grain boundary shape. In Ni-Al alloys the grain boundaries are even and smooth while in Ni-Nb alloys the Nb promotes formation of complex-

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USSR

SHORSHOROV, M. KH., et al., Svarochnoye Proizvodstvo, No 4, Apr 73, pp 6-8

shape boundaries with a high degree of evenness which prevent slip. Consequently, alloying of nickel with Nb helps prevent the formation of hot cracks for the reasons give above, while aluminum alloying increases growth of crack formation in relation to increased aluminum content. Two figures, 13 bibliographic references.

2/2

USSR

UDC 621.791.011:620.192.4:669.245:669.28:669.046.52

LOSEVA, G. I., Engineer, and BULATOV, YU. V., Candidate of Engineering Sciences

"Effect of Alloying Alloy E1435 With Molybdenum on Its Resistance to Hot Crack Formation"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 73, pp 51-52

Abstract: An industrial heat of Ni-Cr alloy E1435 was produced, with 10, 16, and 22% molybdenum added, for studying the effect of alloying on resistance to hot crack formation by a method developed jointly by the Institute of Metallurgy imeni A. A. Baykov and the Central Scientific Research Institute of Ferrous Metallurgy. By this method the following items were determined as shown in the table: a--temperature interval of brittleness; b--deformation capability of the seam metal in this temperature interval and c--critical rate of deformation.

	a, °C	b, mm	c, mm/min
E1435	50	0.03	1.8
E1435+10% Mo	50	0.04	2.4
E1435+16% Mo	40	0.06	4.0
E1435+22% Mo	40	0.07	5.3

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USSR

LOSEVA, G. I and BULATOV, YU. V., Svarochnoye Proizvodstvo, No 3, Mar 73, pp 51-52

Tests also showed that the lower boundary of the temperature interval of brittleness was close to the actual solidus temperature. It was found that in the cast structure of alloy El435 there occurs migration of grain boundaries formed during crystallization. The grain boundaries in Ni-Cr-Mo alloys develop independently of the molybdenum content. The deformation capability of the seam metal and critical rate of deformation are increased with increased Mo content. Tests showed that cracks in alloy El435 with no Mo and with 10% Mo are formed in the solid-liquid state close to the solidus. Also Mo decreases intergranular slippage in the seams of Ni-Cr alloys. 3 figures, 1 table, 3 bibliographic references.

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USSR

UDC 539.4

LOSEVA, G. I., and CHERNYSHOVA, T. A., Moscow

"Boundary Migration and the Intergranular Slip in Weld Seams of Nickel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No. 5, Sep-Oct 71, pp 143-146

Abstract: Quantitative investigation data of the migration of grain boundaries and the intergranular slip in weld seams of nickel are presented. The investigated specimens were of pure nickel, their seams were produced by electron-beam melting, and the grain slipping was investigated by help of an interferometer. The investigation results are discussed by reference to microphotographs showing the migration of grain boundaries in the weld seam and of interference lines on the grain boundary. A diagram shows the slip dependence of the grain on its diameter. The dislocation structure of the weld seam where the migration passed shows that the migrating boundary "washes off" crystalline imperfections by producing a material with a corrected crystalline

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USSR

LOSEVA, G. I. and CHERNYSHOVA, T. A., Fizika i Khimiya Obrabotki Materialov,  
No 5, Sep-Oct 71, pp 143-146

lattice. In the region where the boundary migration passed, the microhardness is 10 % lower than near the stationary boundary and somewhat lower than the hardness in the grain center. Four illustr., 11 biblio. refs.

2/2

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ANTICOAGULANT ACTIVITY OF RARE EARTH SALTS --U--  
AUTHOR--(05)--LAKIN, K.M., ZIMAKOV, YU.A., PLYUSHCHEV, V.YE., NADEZHDEINA,  
G.V., LOSEVA, G.S.  
COUNTRY OF INFO--USSR  
SOURCE--FARMAKOL. TGKSIKOL. (MOSCOW) 1970, 33(2), 205-10  
DATE PUBLISHED--70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ANTICOAGULANT DRUG, RAT, RABBIT, BLOOD CHEMISTRY, HEPARIN,  
RESPIRATION, RARE EARTH COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0367 STEP NO--UR/0390/70/033/002/0205/0210  
CIRC ACCESSION NO--AP0127948  
UNCLASSIFIED



2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRS ACCESSION NO--AP0127948

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I.V. ADMINISTRATION TO RATS AND  
RABBITS OF PROIONATES OF DY, LA, TB, Y, HO, ER, NO, GO, Y8, CE, PR, LU,  
AND SM AT 0.5 ML 2PERCENT AQ. SOLN.-KG INCREASED FREE HEPARIN CONTENT IN  
BLOOD BY DEGRADATION OF MAST CELLS; THUS LESSENING COAGULABILITY.  
THERE WAS NO APPRECIABLE EFFECT ON ARTERIAL TENSION OR RESPIRATION.  
FACILITY: II. MOSK. MED. INST. IM. PIROGOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--THERMAL CONVERSION OF DELTA-FeOOH TO ALPHA-Fe SUB2 O SUB3 STUDIED  
BY MOESSBAUER SPECTROSCOPY AND X RAY DIFFRACTION METHODS -U-  
AUTHOR--(05)-VLASOV, A.YA., LOSEVA, G.V., MAKAROV, YE.F., MURASHKO, N.V.,  
PETUKHOV, E.P.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1499-503  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, CHEMISTRY  
TOPIC TAGS--MOSSBAUER EFFECT, SPECTROSCOPY, CRYSTAL STRUCTURE, X RAY  
DIFFRACTION, IRON OXIDE, HEMATITE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0953 STEP NO--UR/0181770/012/005/1499/1503  
CIRC ACCESSION NO--AP0133039  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133039

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE CRYSTAL STRUCTURE OF SYNTHESIZED DELTA-FeOOH AT THE TEMP. OF TRANSFORMATION INTO ALPHA-Fe SUB2 O SUB3 WAS STUDIED BY MOESSBAUER SPECTROSCOPY AND X RAY DIFFRACTION. INVESTIGATIONS WERE CARRIED OUT AT ROOM TEMP. USING SPECIMENS PREVIOUSLY HEATED FOR 30 MIN AT 23-650DEGREES. AT 23-155DEGREES DELTA-FeOOH EXISTS IN THE SUPERPARAMAGNETIC STATE. THE MOESSBAUER PARAMETERS ARE: ISOMER SHIFT DELTA EQUALS 0.64 PLUS OR MINUS 0.06 MM-SEC RELATIVE TO NA NITROPRUSSIDE AND QUADRUPOLE SPLITTING 2 EPSILON EQUALS 0.48 PLUS OR MINUS 0.06 MM-SEC. THE LATTICE CONSTS. ARE A EQUALS 2.546 PLUS OR MINUS 0.005 AND C EQUALS 4.57 PLUS OR MINUS 0.05 ANGSTROM. THE TRANSFORMATION OF DELTA-FeOOH INTO HEMATITE OCCURS AT 155-225DEGREES WITH A SHARP DECREASE IN THE MAGNITUDE OF THE EFFECT, A JUMP IN THE ISOMER SHIFT, AN INCREASE IN THE WIDTH OF THE MOESSBAUER LINES, AND MAX. BROADENING OF THE X RAY POWDER DIAGRAM. HEMATITE FORMED AT 225-650DEGREES HAS A EQUALS 5.032 PLUS OR MINUS 0.005 AND C EQUALS 13 PLUS OR MINUS 0.1 ANGSTROM. THE EFFECTIVE FIELD ON THE NUCLEUS IN HEMATITE VARIES FROM H SUBEFF EQUALS 409 PLUS OR MINUS 30 TO 515 PLUS OR MINUS 10 KOE AT CONST. DELTA EQUALS 0.61 PLUS OR MINUS 0.06 MM-SEC AND 2 EPSILON EQUALS 0.34 PLUS OR MINUS 0.06 MM-SEC. FACILITY: INST. FIZ., KRASNOYARSK, USSR.

UNCLASSIFIED

USSR

LOSEVA, I. Ye.

"Toxicological Evaluation of Methyl Methacrylate"

Tr. Azerb. NII gigiyeny truda i prof. zabolevaniy (Works of Azerbaydzhan Scientific Research Institute of Labor Hygiene and Occupational Diseases), 1969 (1970), vyp. 4, pp 105-109 (from RZh-Biologicheskaya Khimiya, No 4, 25 Feb 71, Abstract No 4F2255 by A. I.)

Translation: Inhalation inoculation of frogs with methyl methacrylate vapor (0.05 mg/l, 5 hrs a day, 5 times a week over 4.5 months) lowered the elimination of hippuric acid in the urine and increased the excretion of glycuronic acid.

1/1

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USSR

UDC 581.132.035.582.263

PETROV, V. YE. and LOSEVA, N. I., Kazan University imeni V. I. Ulyanov-Lenin

"Change in the Energy Balance of *Chlorella pyrenoidosa* Photosynthetic in Relation to Its Functional State and Light Conditions"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 28-34

Abstract: Changes in the intracellular balance were studied in *Chlorella pyrenoidosa* grown in a thermostat-controlled chamber and exposed to about 10,000 lux from daylight lamps. When the functional activity of the plants decreased for one reason or another and the intensity of light was low, the exoergic processes (e.g., respiration) tended to predominate over the endoergic (photosynthesis). This did not occur at higher light intensities.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--FLOTATION PROPERTIES OF PHOSPHORUS COMPOUNDS CONTAINING SULFUR -U-  
AUTHOR--(04)-SOLOZHENKIN, P.M., MASTRYUKOVA, T.A., LOSEVA, N.P.,  
TREGUBENKO, N.I.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(4), 26-30  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLOTATION REAGENT, GALENA, THIOL, BENZENE DERIVATIVE,  
PHOSPHATE ESTER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1400 STEP NO--UR/0425/70/013/004/0025/0030  
CIRC ACCESSION NO--AT0128799  
UNCLASSIFIED

2/2 009  
CIRC ACCESSION NO--AT0128799

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FLOTATION OF GALENA, PYRITE, AND ANTIMONITE WAS STUDIED AS A FUNCTION OF THE CONC. OF MONO AND DITHIOPHOSPHORIC AND PHOSPHOROUS ACIDS. THE EFFECT OF PH ON THE FLOTABILITY OF GALENA BY DIETHYL THIOPHOSPHINATE, DIETHYL THOPHOSPHATE, AND DIPHENYL DITHIOPHOSPHINATE OF DIFFERENT CONCNS. WAS ALSO DETD.

FACILITY: INST. KHIM., DUSHANBE, USSR.

UNCLASSIFIED

AA0052665

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 1-70

241296 PILE-DRIVING SUSPENSION ARRANGEMENT

differs from that in Pat. 233536 by  
hinging carriage 7 to the driving jib 8, at which  
end there is a stop made in the form of an  
electric jack electrically connected to the switch  
terminals placed in a hinged movable carriage,  
allowing free motion of the driving jib 8 in the  
vertical plane. This improves the construction.  
20.4.67. as 1164347/29-14, Add to 233536, LOSHAK,  
I.A. et al. "Glavsevkavstroya" Office (15.8.69)  
Bul. 13/1.4.69. Class 84c, Int. Cl. E 02d.

Loshak, I. A.; Zal'tsman, T. M.; Grinberg, L. I.; Mokryakov, V. M.;  
Mazyar, Ye. Z.; Beyzym, Ya. T.

Konstruktorskoye Tekhnologicheskoye Byuro Spetsializirovannogo  
Upravleniya Mekhanizatsii Stroitel'stva Glavsevkavstroya

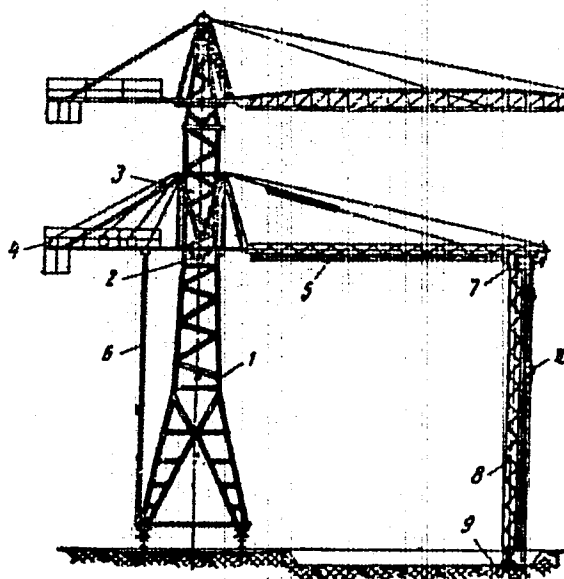
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AA0052665



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19821416

USSR

UDC 539.4.43

LOSHAK, M. G., FRIDMAN, V. M., Institute of Ultrahard Materials, Kiev

"Effect of Size in Powder-Metallurgy Hard Alloys of the Tungsten Group"

Kiev, Problemy prochnosti, No. 8, Aug 71, pp 43-47

Abstract: The effect of the dimensions of hard-alloy samples and the technique of fabricating them on the static and dynamic strength characteristics of alloys with varying contents of cobalt and different elastic-plastic properties is studied. Medium-grain alloys with a Co content of 6, 15 and 25 wt. % were studied. This choice was due to the wide use of VK6, VK15 and VK25 alloys and the possibility of studying alloys with different elastic-plastic properties in order to obtain data characterizing the role of the scale effect for all alloys of the tungsten group. The characteristics of the cyclic strength under shock and harmonic loading were also studied in addition to determining the static strength and strength under a single shock because of the known great sensitivity of the fatigue tests to the scale effect. The smaller samples had dimensions of  $3.75 \times 3.75 \times 25$  mm, which are close to the dimensions of a

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USSR

LOSHAK, M. G., FRIDMAN, V. M., Problemy prochnosti, No. 8, Aug 71, pp 43-47

standard sample and the largest had dimensions of  $15.00 \times 15.00 \times 100$ . It was found that a scale effect appears in hard alloys under static and single shock loading and under cyclic shock and harmonic loading. The drop in the strength limit under bending with an increase in the volume of the sample from 300 to  $20,000 \text{ mm}^3$  is 40%. The strength of solid parts under static and dynamic loads were measured taking into account the effect of scale on the geometrically similar and structurally identical control samples. An additional change in the strength characteristics is associated with fabrication technology, said to be possible for very large parts of hard alloys.

USSR

UDC 547.241:536.423.15

NAKHUTIN, I. Ye., SMIRNOVA, N. M., KRIVENKO, V. I. and LOSEVAKOV, G. A.

"Vapor Pressure of Di-n-heptylphosphoric Acid and Tri-n-Octylphosphine Oxide and the Solubility of Iodine in These Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 940-943

Abstract: Data on the vapor pressures of di-n-heptylphosphoric acid and tri-n-octylphosphine oxide are provided, in addition to boiling points and isosteric temperatures of evaporation from the liquid phase. The compensation method was used to plot vapor pressure curves. The solubility of iodine in the liquid phase of both compounds was studied. Although organophosphorous compounds rarely act as acceptors in a chemical reaction, the specific compounds considered show characteristics of electrophilic bonding with iodine. In the case of di-n-heptylphosphoric acid, iodine solubility increases with rising temperatures within the range of 80-180°, while for tri-n-octylphosphine oxide, it remains constant over the same range.

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Vacuum Tubes

USSR

UDC 621.385.632.12

LOSHAKOV, I.N., OL'DEROGGE, YE.B. [Members, Scientific-Technical Society Of Radio Engineering, Electronics, And Communication imeni A.S. Popov]

"Distribution Of Longitudinal Electrical Field In Electron Stream Of TWT"

Radiotekhnika, Vol 27, No 6, June 1972, pp 90-92

Abstract: The transverse structure of a longitudinal electrical field in an electron stream is established for two regimes in the amplification region of a TWT. The data obtained are useful for development of an analysis of the operation of a TWT. 2 fig. 2 ref. 1 tab. Received, 16 June 1970.

1/1

USSR

UDC 621.385.632

LOSHAKOV, L. N., SMIRNOV, YE. N.

"Measurement Of Reflections From The Internal Absorber Of A TWT"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 153-155 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A187)

Translation: A new method is described for inspection of the quality of matching of the internal absorber of a traveling-wave tube, based on the use of an auxiliary mobile absorber which, in contrast to the known method with a mobile dielectric, can be used with smaller lengths of the sections between reflecting discontinuities. Summary.

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- 85 -

USSR

UDC 621.396.6-181.5

LOSHAKOV, V. N.

"System for Automating the Planning and Design of Large Integrated Circuits using Computers"

Elektron. prom-st'. Nauch-tekhn. sb. (Electronic Industry. Scientific-Technical Collection), 1970, No 2, pp 45-49 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract 4V182)

Translation: A system for automating the design of large integrated circuits using the BESM-4 computer and an automatic coordinate measuring instrument is proposed. The corresponding algorithms and results of executing them on the BESM-4 computer are presented.

1/1

LOSHCHENKOV, Fedor Ivanovich

Varoslavskaya  
Abast

LARGE DISCIPLINE PROBLEMS IN YANGLAVSKAYA QUARTER DISCUSS

(Example from article by V. Loshchenkov, First Secretary of the  
Komsomol of the Yablonsky District of the CPSU, Moscow, "Pravda" (Moscow)  
Russian, No. 3, February 1972, signed by person 0 February 1972, in code)

In the past five-year plan, engine builders increased the life  
of diesel engines from 1500 to 2000 hours, and have increased the  
responsibility of technicians to the end of the  
five-year plan. This gives the state more and more a million  
hours. In the last five-year plan, technicians to the end of the  
five-year plan have increased the life of large-size tractors to 20,000. The  
present five-year plan will see the life of large tractors increase an additional  
20 percent in comparison with the 1970 figure.

Far from all collective, however, are keeping up with the leader.  
There are enterprises which do not fulfill their production plan or have  
productivity plans. Some building organizations have not been able to  
execute plans for construction work. Among them are the building of the  
Komsomol, hospitals, and enterprises of transportation, trade, and  
everyday services.

Exactly why do collective which operate under essentially equal  
conditions have different indicators for fulfillment of plan assignments?  
Individual instances, of course, can be explained by factors independent  
of the particular enterprise's circumstances. The main cause of failure  
to fulfill state plans, however, is a low level of economic management,  
which deprives some workers of the feeling of responsibility to society  
and the state.

The state's party organizations have done considerable work in  
industrializing, supervising personnel, and as a result of this we have  
produced many responsible production organizations who can conduct business  
on a level corresponding to modern requirements. Yet there are still  
directors who barely disrupt party and state discipline, permit abuses  
in enterprises, and at the same time do great damage to the industrialization  
of their own collective.



USSR

UDC 669.14.044.35:630.362

TERZIYAN, P. G., SASIYEV, M. P., LOSHCHEV, V. Ya., KONENASHOV, M. M., and  
CHEBOTNIKOV, A. G., Kommunarsk Metallurgical Plant; Scientific Research In-  
stitute of Mining and Metallurgy

"Effect of the Method of Deoxidation on the Quality of Semi-Killed Steel"

Moscow, Metallurg, No 9, Sep 70, pp 21-22

Abstract: This paper concerns the effect of the method of deoxidation of semi-killed steel on the rejects of the first conversion. Until 1965, it was the practice to deoxidize semi-killed 3 ps steel in the ladle with 45% ferrosilicon at 2.2 kg/t and with aluminum at 250 g/t. In 1966 the procedure was changed to deoxidation in the ladle with ferrosilicon alone, which has been used in correspondingly increased ratios. Deoxidation of 3 ps steel with ferrosilicon alone produces a more stable residual oxygen content in the steel. The test data show that the rejects of the first conversion, using ferrosilicon alone in the ladle, decrease as compared to that resulting from deoxidation with ferrosilicon and aluminum. A study of the macrostructure of ingots of semi-killed steel has demonstrated honeycomb blowholes in a normally deoxidized ingot. The blowholes were observed only in the upper part of the ingot. The formation and growth of honey comb blowholes in both semi-killed and rimmed

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USSR

TERZIYAN, P. G., et al, Metallurg, No 9, Sep 70, pp 21-22

steels are related to the ratio of pressure occurring in the blowhole ( $P_{bl}$ ), which is in contrast to the directional external pressure on the blowhole ( $P_{ext}$ ), the latter depending on ferrostatic pressure. With an increase in external pressure, the equilibrium concentrations of oxygen increase, creating dissimilar conditions for the reaction  $C + 1/2 O_2 \rightarrow CO$  in various zones over the length of the ingot. The presence of blowholes at the surface of the upper part of the ingot is typical of normally deoxidized metal. The lack of such blowholes indicates overdeoxidation and the appearance of a shrinkage cavity.

2/2

Automatic Control: Instruments

USSR

UDC 681.325+62-52

LISICHKIN, D. A., LOSHCININ, A. A., PROKOSHEVA, V. V., SHISHKOVA, Yu. I., SHCHUKIN, A. I.

Operatsionnyye Ustroystva EVM i Avtomatiki (Operational Devices for Computers and Automation), Moscow, "Sovetskoye Radio," 1972, 255 pp

Abstract: The book proposes methods for designing and determining the characteristics of operational amplifiers and converters for changing analog quantities to digital code. The theory is outlined and methods are presented for determining static and dynamic characteristics and errors. Consideration is given to synthesis of optimum structures for the amplifiers and converters and to ensuring their operational stability. Examples of calculations and circuits for elements in high-amperage converters are given.

A distinguishing feature of the book is analysis of operational devices as complex units, and synthesis of calculations by the method of successive approximations for computer application.

The book is written for engineers and technicians, as well as for advanced college and university students as a text in the development and design of operational amplifiers and analog-digital converters.

1/1

USSR

UDC 534.21:539.3

LUKASHEV, A.A., LYSKO, YE.M., VEREMEYENKO, S.V., VOZNEVSKAYA, S.M.,  
LOSHCHININ, V.P. (Kishinev), All-Union Scientific Research Institute for the  
Development of Non-Destructive Methods and Facilities for Quality Control  
of Materials.

"Distribution of Elastic Waves in a Solid For a Four-Constant Elastic Model  
of a Continuous Medium"

Kiev, Prikladnaya Mekhanika, No 3, 1972, pp 32-35

Abstract: Equations are obtained for the velocity of sound in a nonlinear  
four-constant model of a continuous elastic medium. Change of the velocities  
of the longitudinal waves with pressure is described by a combination of  
second- and third-order elastic constants. Change of the velocities of the  
transverse waves is determined only by second-order elastic constants (geo-  
metrical nonlinearity). It is shown that the numerical values of second-order  
elastic constants obtained at zero pressure and at uniaxial compression differ  
by a factor of several units. 1 table, 4 bibliographic entries.

1/1

1/2 051 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EMISSION CHARACTERISTICS OF SOME REFRACTORY METALS WITH MIXED  
ADSORBED CESIUM AND BARIUM FILMS -U-  
AUTHOR--(03)-BONDARENKO, V.D., LOSHKAREV, A.I., ULMASBAYEV, B.SH.  
COUNTRY OF INFO--USSR  
SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(1), 211-13  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--REFRACTORY METAL, CESIUM, BARIUM, FIELD EMISSION, METAL FILM,  
TUNGSTEN, MOLYBDENUM, NIOBIUM, METAL COATING, WORK FUNCTION,  
CRYSTALLOGRAPHY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1951 STEP NO--UR/0294/70/008/001/0211/0213  
CIRC ACCESSION NO--AP0118913  
UNCLASSIFIED

2/2 051

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118913

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. WORK FUNCTIONS, PHI, AND FIELD EMISSION IMAGES OF VARIOUS CRYSTALLOGRAPHIC PLANES OF W, MO, AND Nb COATED WITH ABSORBED CS AND BA FILMS WERE STUDIED AT 11-2 TIMES 10 PRIME NEGATIVE 9 MM HG. SINGLE CS FILMS ARE ACTIVE MAINLY IN THE (112) AND (110) PLANES; THE EMISSION OF SINGLE BA FILMS IS MAX. FROM (122), (123), AND (111) PLANES; THE EMISSION OF SINGLE BA FILMS IS MAX. FROM (122), 123), AND (111), (112) PLANES AT THETA BA IS MUCH LESS THAN L AND THETA BA CONGRUENT TO L, RESP. (THETA EQUALS T-T SUBOPT, WHERE T IS THE ACTUAL DURATION OF BA OR CS DEPOSITION, AND T SUBOPT IS THE TIME REQUIRED FOR OBTAINING THE MIN. PHI). MIXED CS-BA FILMS WERE OBTAINED BY DEPOSITING CS ON BA-COATED METALS; IN ALL CASES, PHI CS-BA WAS LOWER THAN PHI BA. THE EMISSION OF THE CS-BA-METAL SYSTEM IS MAX. FROM (112) AND (110) PLANES AT THETA BA IS LESS THAN OR EQUAL TO 0.3; THE CONTRIBUTION FROM (112) DECREASES FOR THETA BA YIELDS 1.

UNCLASSIFIED

Acc. Nr:

AP0034109

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code:

UR 0078

71107a Kinetics of nickel titanate formation.

B. A.; Sycheva, N. A. (Ural. Politekh. Inst., Sverdlovsk, USSR).

Zh. Neorg. Khim. 1970, 15(1), 10-11 (Russ). The reaction of NiO with TiO<sub>2</sub> at 800-1300° give NiTiO<sub>3</sub>. The kinetics of NiTiO<sub>3</sub> formation were studied at different temps. The apparent activation energy of this process is 44 kcal/mole, and at 1000-1100°, NiTiO<sub>3</sub> formation rate can be described by the empirical equation:  $\ln' = 18.8/(0.18 + 0.9 \log t)^2$  where  $t$  = time.

HMJR

REEL/FRAME

19710752

USSR

UDC 582.682.4-119.22:547.943:543.052

GAYEVSKIY, A. V., and LOSHKAREV, P. M., All Union Scientific Research Institute of Medicinal Plants, Moscow Region

"A Method for Quantitative Determination of Morphine in the Opium Poppy Pods"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 6, Jun 72, pp 54-60

Abstract: Most of the methods for determination of morphine in poppy seeds -- *Papaver somnifer* ML -- are rather lengthy and difficult, or inaccurate because of their complex composition of the alkaloids and a lack of specific reactions making an analysis possible without isolation. A new method was developed at the All Union Scientific Research Institute of Medicinal Plants. The entire content of alkaloids is extracted according to the procedure developed at Kharkov Scientific Chemical-Pharmaceutical Research Institute. Morphine is separated from the accompanying bases and deeply colored materials by thin layer chromatography on silica gel using a 30:10:1 mixture of chloroform: isopropanol: 25% ammonia solution, and determined colorimetrically after a reaction with sodium nitrite and ammonia.

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1/2 028 UNCLASSIFIED PROCESSING DATE--11 SEP 70  
TITLE--KINETICS OF THE ELECTRODEPOSITION OF CADMIUM AND ADSORPTION  
PHENOMENA -U-  
AUTHOR--LOSHKAREV, YU.M., SNETKOVA, L.P.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. KHIM. ZH. 1970, 36(1), 36-42  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ELECTRODEPOSITION, CADMIUM, REACTION KINETICS, SURFACE ACTIVE  
AGENT, ALIPHATIC SULFUR COMPOUND, SULFATE, ELECTRODE POTENTIAL,  
POLAROGRAPHIC ANALYSIS, ELECTROLYTIC SOLUTION, SOLUTION CONCENTRATION,  
ELECTRODE PROPERTY, ADSORPTION, AMINE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAAME--1989/1336 STEP NO--UR/0073/70/036/001/0736/0647  
CIRC ACCESSION NO--AP0107809  
22772277777 UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP79

CIRC ACCESSION NO--AP0107809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF SURFACE ACTIVE INORG. ANIONS ON THE INHIBITORY ACTION OF ADDITIVES ON THE DISCHARGE OF CD AT HG AND SOLID ELECTRODES WAS STUDIED. THE ADDN. OF (BU SUB4 N) SUB2 SO SUB4 TO SOLNS. OF CU PRIME2 POSITIVE, BI PRIME3 POSITIVE, SN PRIME2 POSITIVE, AND CD PRIME2 POSITIVE PRODUCES VERY LITTLE EFFECT ON THE POLAROGRAPHIC HALF WAVE POTENTIAL IF THE SUPPORTING ELECTROLYTE IS N NA CL OF HCL AND THE CHANGE RANGE FROM 0.36 FOR SN TO 1.06 V FOR CU IF THE SUPPORT IS N NA SUB2 SO SUB4 OR H SUB2 SO SUB4. POLAROGRAPHIC CURVES ARE GIVEN FOR CD IN THE PRESENCE OF (BU SUB4 N) SUB2 SO SUB4 AND VARYING AMTS. OF CL PRIME NEGATIVE AND I PRIME NEGATIVE. I PRIME NEGATIVE IS MORE EFFECTIVE AT LOW CONC. IN REDUCING THE INHIBITORY EFFECT OF THE AMINE. THE ACTION OF THE HALIDE IS MUCH LESS AT LOW TEMP. THE SHAPE OF THE POLAROGRAPHIC CURVES, WHICH HAVE A MAX. AT LOW NEG. POTENTIALS AND A MIN. AT MORE NEG. P.D. IS ATTRIBUTED TO THE ADSORPTION OF THE HALIDE ANION WHICH IS REDUCED BY A NEG. CHARGE. THE FACT THAT THE ANIONS ARE EFFECTIVE AT ALL WITH A NEG. P.D. IS ATTRIBUTED TO THE EFFECT OF THE ADSORBED POS. AND NEUTRAL SURFACE ACTIVE AGENTS.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--INVESTIGATION OF IRON SUBLATTICES IN A SINGLE CRYSTAL OF THE  
ORTHOERRITE IMFEC SUB3 -U-  
AUTHOR--(04)--KUCHAROV, A.G., LUSHMANOV, A.A., YAMZIN, I.I., CHERVONENKIS,  
A.YA.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,  
NR 5, PP 1511-1517  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTALLOGRAPHY, IRON OXIDE, MAGNETIC STRUCTURE, NEUTRON  
SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/1930

STEP NO--UR/0056/70/058/005/1511/1517

CIRC ACCESSION NO--AP0125522

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125522  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE BEHAVIOR OF THE ANTIFERROMAGNETIC STRUCTURE PRODUCED BY FE PRIME3 POSITIVE ION MOMENTS IN THE ORTHORHOMBIC COMPOUND TMFEO SUB3 IS INVESTIGATED BY THE ELASTIC MAGNETIC NEUTRON (LAMBDA EQUALS 1.07 ANGSTROM) SCATTERING AND TORQUE TECHNIQUES AT TEMPERATURES BETWEEN 78 AND 720DEGREESK. THE NEEL TEMPERATURE OF THE IRON SUBLATTICES DETERMINED ON BASIS OF TEMPERATURE DEPENDENCE OF THE INTEGRAL MAGNETIC REFLECTION INTENSITIES IS 550 PLUS OR MINUS 5DEGREESK. THE EXPERIMENTAL TEMPERATURE DEPENDENCE OF THE INTEGRAL INTENSITIES IS IDENTICAL WITH THE BRILLOUIN FUNCTION FOR THE GROUND SPIN STATE S SUBFIVEHALVES OF THE FE PRIME3 POSITIVE ION. AT 0DEGREESK THE MAGNETIC MOMENT OF IRON IONS IS 4.08 PLUS OR MINUS 0.08 MU SUBB. IT IS SHOWN THAT THE ANOMALY OF THE TORQUES AT TEMPERATURES BETWEEN 103 AND 78DEGREESK IS DUE TO REORIENTATION OF THE EASY MAGNETIZATION VECTOR AWAY FROM THE (001) DIRECTION TO THE (100) DIRECTION; AT 78DEGREESK THIS REORIENTATION DOES NOT TERMINATE. CAUSES OF DISCREPANCIES BETWEEN THE EXPERIMENTAL AND CALCULATED FORM FACTORS FOR THE FE PRIME3 POSITIVE ION AT ALRGE SCATTERING ANGLES ARE DISCUSSED. CAUSES OF THE SHIFT OF THE REORIENTATION TEMPERATURE INTERVAL IN MAGNETIC AND NEUTRON DIFFRACTION MEASUREMENTS ARE ALSO DISCUSSED. FACILITY: INSTITUT KRISTALLOGRAFI, AN SSSR.

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